Patent claims

1. A device for producing an aerosol, with a liquid line for a liquid flow and a transport gas line for a transport gas flow, with at least one injector unit, in which the liquid flow and the transport gas flow can be mixed to form an aerosol, and with an aerosol line, which leads to an aerosol discharge arranged in the region of a tool, characterized in that the injector unit (11) has flow conducting means (16 to 18) for the transport gas flow which define a sucking-in and atomizing function for the liquid flow when there is a pressure loss for the transport gas flow which is less than a minimum possible pressure loss at the aerosol discharge (15).

2. The device as claimed in claim 1, characterized in that a channel portion for the transport gas flow and a channel region for the liquid flow are arranged coaxially in relation to each other within the injector unit (11).

3. The device as claimed in claim 2, characterized in that the channel portion for the transport gas flow is configured as an annular channel concentrically surrounding the channel region of the liquid flow, and in that the flow conducting means comprise an annular constriction (18) at the level of a stub-like end region (16) of the channel region of the liquid flow, which together with an outer casing of the end region (16) defines an annular gap (21).

4. The device as claimed in claim 3, characterized in that the annular gap (21) is configured with dimensioning of < 0.5 mm, preferably of approximately 0.1 mm.

5. The device as claimed in claim 1, characterized in that pressure sensing means (9, 13) are provided in the region of the transport gas line (8) and in the region of the aerosol line (12), and in that a control unit S is provided, which, depending on a comparison of actual pressure values sensed by the pressure sensing means (9, 13) with set pressure differential values stored in a set-value memory (D) on the basis of various parameters for different machining operations, controls a differential pressure between the pressure in the transport gas line (8) and the pressure in the aerosol line (12).

6. The device as claimed in claim 5, characterized in that the control unit is assigned a control program, which activates at least one functional unit of the device, in particular an aerosol producer, with different control commands and in each case performs differential pressure measurements by means of the pressure sensing means, and in that a comparison of the sensed actual values of the differential pressure measurements with corresponding set values of the set-value memory is performed, and finally a preselection of appropriate parameters is made from the set-value memory.

7. The device as claimed in claim 5, characterized in that a number of injector units (11) are provided in parallel connection, to which a control branch (8a, 8b) of the transport gas line (8) that can be controlled by an actuating element (10) is respectively assigned, and in that the actuating elements (10) can be activated by the control unit (S) in such a way that at least one injector unit (11) is permanently functioning.

8. The device as claimed in claim 7, characterized in that the activation of the actuating elements (10) by the control unit (S) takes place in dependence on corresponding control defaults of the set-value memory (D).

9. An injector unit for a device for producing an aerosol with at least one channel portion for a transport gas flow and at least one channel region for a liquid flow, characterized in that the channel portion for the transport gas flow is configured as an annular channel concentrically surrounding the channel region of the liquid flow, and in that the flow conducting means comprise an annular constriction (18) at the level of a stub-like end region of the channel region of the liquid flow, which together with an outer casing of the end region (16) defines an annular gap (21).

10. The injector unit as claimed in claim 9, characterized in that the channel portion for the transport gas flow narrows in a funnel-shaped manner in the direction of flow toward the constriction (18), and an aerosol chamber portion (20) lying downstream of the end region (16) widens in a correspondingly funnel-shaped manner in the direction of flow.